

Discussion of "Digital euro demand: design, individuals' payment preferences and socioeconomic factors"
by Lambert, Larkou, Pancaro, Pellicani, Sintonen

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Overview

- ▶ **Goal:** Understanding the demand for central bank digital currency (CBDC)
- ▶ **Empirical Challenge:** CBDC does not yet exist in the Euro Area
- ▶ **Approach:**
 1. Focus on something that does exist: cash & demand deposits \Rightarrow estimate demand for cash & demand deposits as function of their characteristics
 2. Assume CBDC is a convex combination of cash & demand deposits \Rightarrow predict CBDC demand with estimated demand system in step (1)
- ▶ **Main Results:**
 1. Without holding limit: 3-28% of household liquid assets or €0.12-€1.11 trillion
 2. With €3000 holding limit: 2-9% of household liquid assets or €0.1-€0.38 trillion

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Demand Estimation Approach

- ▶ Individual i 's indirect utility of holding product $j \in \{\text{cash}, \text{deposits}\}$ is given by

$$u_{i,j} = \alpha' x_{i,j} + \gamma_j' z_i + \eta_j + \epsilon_{i,j} = V_{i,j} + \epsilon_{i,j} \quad (1)$$

$x_{i,j}$ are product attributes (e.g., interest rate)

z_i are individual characteristics (e.g., age)

γ_j are product-specific sensitivities

η_j are product-specific fixed effects

$\epsilon_{i,j}$ are i.i.d. utility shocks \rightarrow from Type I extreme value distribution

- ▶ Difference between logs of deposit and cash shares given by

$$\ln\left(\frac{q_{i,d}}{q_{i,c}}\right) = V_{i,d} - V_{i,c} = \alpha'(x_{i,d} - x_{i,c}) + (\gamma_d - \gamma_c)' z_i + \eta_d - \eta_c \quad (2)$$

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Estimation Results (1)

Variable	Log(deposit/cash)
Deposit rate	2.807
Online payment	0.027***
Acceptance rate	0.013
Anonymity/privacy	-0.201***
Budgeting usefulness	0.095***
Instant settlement	-0.11***
Speed	0.147***
Security	0.151***
Automatic funding	0.148***
Ease of use	0.065***
P2P payment	0
Contactless	0.006***
Constant	0.310
Adjusted R-squared	0.206
Observations	34019

Imputation CBDC Demand

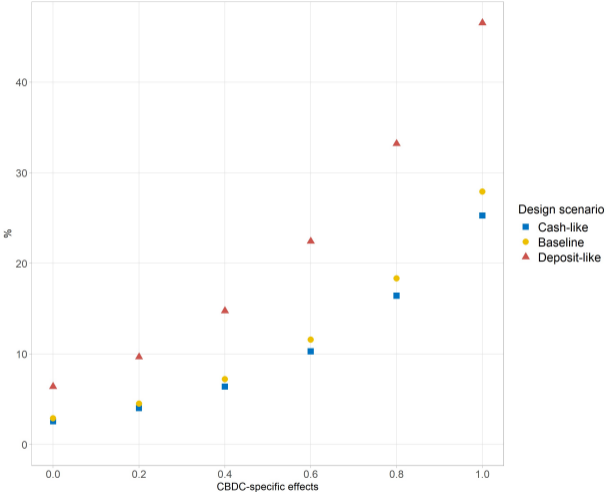
- ▶ Compute individual i 's utility for CBDC as

$$V_{i,CBDC} = \hat{\alpha}'x_{i,CBDC} + \gamma'_{CBDC}z_i + \eta_{CBDC} \quad (3)$$

- ▶ **Assumption:** $\gamma_{CBDC} - \eta_{CBDC}$ range between $\hat{\gamma}_{cash} - \hat{\eta}_{cash}$ and $\hat{\gamma}_{deposits} - \hat{\eta}_{deposits}$
- ▶ $x_{i,CBDC}$ are assumed CBDC design features: cash-like, deposit-like, baseline

Attribute	Cash-like design	Deposit-like design	Baseline design
Ease of use	Cash	Card	Card
Transaction speed	Cash	Card	Card
Security	Cash	Card	Card
Budgeting usefulness	Cash	Card	Card
Acceptance rate	Cash	Card	Card
Online store	0	1	1
P2P	1	0	1
Anonymity/privacy	1	0	0.5
Instant settlement	1	1	1
Remuneration rate	0	Deposit rate	0
Contactless	1	1	1
Automatic funding	0	1	1

Estimation Results (2)



Comments & Suggestions

Comments

1. **Key result:** CBDC holdings range from 3% to 47%. Quite wide, how can we narrow this down?

Parameter assumption: γ_{CBDC} & η_{CBDC} could lie outside range $\hat{\gamma}_{cash} - \hat{\eta}_{cash}$ and $\hat{\gamma}_{deposits} - \hat{\eta}_{deposits}$

To address both issues \Rightarrow Ask people if they view CBDC as replacement for deposits or cash!

2. **Contribution to the literature:** Paper is basically a replication of Li (2023, JME) on Euro area data \Rightarrow needs to be clearer to the reader

Analysis is partial-equilibrium: other agents may respond, like banks raising deposit rates. Li (2023) considers extension, reducing upper bound from 52% to 20% \Rightarrow replicate!

3. **Different approach:** Instead of demand estimation, simply ask people how much CBDC they would hold \Rightarrow Bidder et al. (2024) find between 10% and 21% of liquid assets

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